

**IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF TEXAS  
HOUSTON DIVISION**

KT IMAGING USA, LLC,

Plaintiff,

v.

ZHEJIANG DAHUA TECHNOLOGY CO.,  
LTD., ZHEJIANG DAHUA VISION  
TECHNOLOGY CO., LTD., DAHUA  
TECHNOLOGY (HK) LIMITED, LOREX  
TECHNOLOGY INC., and AMCREST  
TECHNOLOGIES LLC,

Defendants.

Civil Action No.: 4:22-cv-3440

**JURY TRIAL DEMANDED**

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff KT Imaging USA, LLC (“KTI” or “Plaintiff”), by way of this Complaint against Zhejiang Dahua Technology Co., Ltd., Zhejiang Dahua Vision Technology Co., Ltd., Dahua Technology (HK) Limited (collectively “Dahua”), Lorex Technology Inc. (“Lorex”), and Amcrest Technologies LLC (“Amcrest”) (collectively “Defendants,” and each a “Defendant”), alleges as follows:

**PARTIES**

1. Plaintiff KT Imaging USA, LLC is a limited liability company organized and existing under the laws of the State of Texas, having its principal place of business at 106 E 6<sup>th</sup> Street, Suite 900, Austin, TX 78701.
2. On information and belief, Defendant Zhejiang Dahua Technology Co., Ltd. is a corporation organized and existing under the laws of China, having its principal place of business at No. 1199, Bin’an Road, Binjiang District, Hangzhou 310053, China.

3. On information and belief, Defendant Zhejiang Dahua Vision Technology Co., Ltd. is a corporation organized and existing under the laws of China, having its principal place of business at No. 1199, Bin'an Road, Binjiang District, Hangzhou 310053, China. On information and belief, Zhejiang Dahua Vision Technology Co., Ltd. is wholly owned subsidiary of Zhejiang Dahua Technology Co., Ltd.

4. On information and belief, Defendant Dahua Technology (HK) Limited is a corporation organized and existing under the laws of Hong Kong, having its principal place of business at Factory Flat No. 2 21/F, Wing Shing Industrial Building, No. 26 Ng Fong St, San Po Kong, HK. On information and belief, Dahua Technology (HK) Limited is “the overseas business entity of [Zhejiang Dahua Technology Co., Ltd.], ... does not have autonomy over its business activities, which are the extension of the business activities of [Zhejiang Dahua Technology Co., Ltd.], constituting the business activities of [Zhejiang Dahua Technology Co., Ltd.]” *See* 2021 Annual Report of Zhejiang Dahua Technology Co., Ltd. at [https://pdf.dfcfw.com/pdf/H2\\_AN202205131565354725\\_1.pdf](https://pdf.dfcfw.com/pdf/H2_AN202205131565354725_1.pdf).

5. On information and belief, Defendant Lorex Technology Inc. is a corporation organized and existing under the laws of Canada, having its principal place of business at 250 Royal Crest Court, Markham, Ontario, Canada L3R3S1. On information and belief, Lorex Technology Inc. is wholly owned subsidiary of Zhejiang Dahua Technology Co., Ltd.

6. On information and belief, Defendant Amcrest Technologies LLC is a limited liability company organized and existing under the laws of the State of Texas, having its principal place of business at 16727 Park Row, Houston, Texas 77084. On information and belief, Amcrest purchases and re-sells Dahua-manufactured products under the Amcrest brand.

### **JURISDICTION AND VENUE**

7. This is an action under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.*, for

infringement by the Defendants of claims of U.S. Patent Nos. 6,876,544; 7,196,322; 8,004,602, and 8,314,481 (collectively, “the Patents-in-Suit”).

8. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

9. Dahua is subject to personal jurisdiction of this Court because, *inter alia*, on information and belief, (i) Dahua has committed and continues to commit acts of patent infringement in the State of Texas, including by making, using, offering to sell, selling, and/or importing the accused products into Texas including in this Judicial District; (ii) Dahua purposefully supplies and directs the accused products for storage, warehousing, and/or sales by distributors and resellers in the State of Texas including in this Judicial District; (iii) Dahua delivers its products into the stream of commerce with the expectation that they will be purchased by consumers in the State of Texas including in this Judicial District and derive revenues from products sold to Texas residents; (iv) Dahua uses its trademark on the accused products sold in the State of Texas; and (v) Dahua is an original equipment manufacturer for Amcrest Technologies LLC, a Texas limited liability company.

10. In addition, or in the alternative, this Court has personal jurisdiction over Dahua pursuant to Fed. R. Civ. P. 4(k)(2).

11. Venue is proper in this district under 28 U.S.C. 1391(c) because, *inter alia*, Dahua are foreign corporations.

12. 9. Lorex is subject to personal jurisdiction of this Court because, *inter alia*, on information and belief, (i) Lorex has committed and continues to commit acts of patent infringement in the State of Texas, including by making, using, offering to sell, selling, and/or importing the accused products into Texas including in this Judicial District; (ii) Lorex purposefully supplies and directs the accused products for storage, warehousing, and/or sales by

distributors and resellers in the State of Texas including in this Judicial District; (iii) Lorex delivers its products into the stream of commerce with the expectation that they will be purchased by consumers in the State of Texas including in this Judicial District and derive revenues from products sold to Texas residents; and (iv) Lorex uses its trademark on the accused products sold in the State of Texas. For example, customers in the State of Texas can purchase and receive accused products from Lorex's website at [www.lorex.com](http://www.lorex.com).

13. In addition, or in the alternative, this Court has personal jurisdiction over Lorex pursuant to Fed. R. Civ. P. 4(k)(2).

14. Venue is proper in this district under 28 U.S.C. 1391(c) because, *inter alia*, Lorex is a foreign corporation.

15. Amcrest is subject to personal jurisdiction of this Court because, *inter alia*, on information and belief (i) Amcrest maintains a regular and established place of business in this Judicial District located at 16727 Park Row, Houston, Texas 77084; (ii) Amcrest sells products and services to customers in this Judicial District, (iii) the patent infringement claims arise directly from Amcrest's continuous and systematic activity in the State of Texas; and (iv) Amcrest actively employs and seeks the services of Texas residents in the State of Texas.

16. Venue is proper as to Amcrest in this Judicial District under 28 U.S.C. § 1400(b) because, *inter alia*, on information belief, Amcrest has a regular and established place of business in this Judicial District located at 16727 Park Row, Houston, Texas 77084, and has committed acts of patent infringement in this Judicial District and/or contributed to or induced acts of patent infringement by others in this Judicial District.

### **BACKGROUND**

17. On April 5, 2005, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 6,876,544 ("the '544 Patent"), entitled "Image Sensor Module and

Method for Manufacturing the Same.”

18. On March 27, 2007, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 7,196,322 (“the ’322 Patent”), entitled “Image Sensor Package.”

19. On August 23, 2011, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 8,004,602 (“the ’602 Patent”), entitled “Image Sensor Structure and Integrated Lens Module Thereof.”

20. On November 20, 2012, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 8,314,481 (“the ’481 Patent”), entitled “Substrate Structure for an Image Sensor Package and Method for Manufacturing the Same.”

21. KTI is the assignee and owner of the right, title, and interest in and to the Patents-in-Suit, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement it.

22. Defendants have infringed and continues to infringe the Patents-in-Suit by making, using, selling, or offering for sale in the United States, or importing into the United States video technology products, such as security cameras and/or video doorbells, with image sensors. Attachment A to this Complaint provides a non-exhaustive listing of Accused Products.

### **COUNT I: INFRINGEMENT OF THE ’544 PATENT**

23. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

24. On information and belief, Defendants have infringed the ’544 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products and all other products with substantially similar imaging sensors.

25. For example, on information and belief, Defendants have infringed and continue to infringe at least claim 1 of the ’544 Patent by including an image sensor module to be mounted

to a printed circuit board in the Accused Products including the Amcrest 4MP USB Webcam (AWC496). *See* Ex. 1 (cross-sectional image of the Amcrest 4MP USB Webcam image sensor). The image sensor module in the Accused Products comprises a substrate having an upper surface formed with a plurality of first connection points, and a lower surface formed with a plurality of second connection points, which is electrically connected to the printed circuit board. *See* Exs. 2, 3 (cross-sectional image of the Amcrest 4MP USB Webcam image sensor and image of the Amcrest 4MP USB Webcam image sensor with the internal components exposed). The image sensor module further comprises a photosensitive chip mounted to the upper surface of the substrate. *See* Ex. 2 (cross-sectional image of the Amcrest 4MP USB Webcam image sensor). The image sensor module further comprises a plurality of wires for electrically connecting the photosensitive chip to the first connection points on the upper surface of the substrate. *See* Ex. 3 (image of the Amcrest 4MP USB Webcam image sensor with the internal components exposed). The image sensor module further comprises a frame layer mounted to the upper surface of the substrate to surround the photosensitive chip, an inner edge of the frame layer being formed with an internal thread from top to bottom, and a transparent layer being fixed by the frame layer such that the photosensitive chip may receive optical signals passing through the transparent layer. *See* Ex. 2 (cross-sectional image of the Amcrest 4MP USB Webcam image sensor). The image sensor module further comprises a lens barrel formed with a chamber at a center thereof and an external thread at an outer edge thereof, the external thread being screwed to the internal thread of the frame layer, wherein the lens barrel has a through hole and an aspheric lens from top to bottom. *See* Ex. 1 (cross-sectional image of the Amcrest 4MP USB Webcam image sensor).

26. On information and belief, Defendants have induced infringement of the '544 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and

encouraging others, including, but not limited to, their partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated image sensor technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

27. On information and belief, Defendants have committed the foregoing infringing activities without a license.

## **COUNT II: INFRINGEMENT OF THE '322 PATENT**

28. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

29. On information and belief, Defendants have infringed the '322 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products and all other products with substantially similar imaging sensors.

30. For example, on information and belief, Defendants have infringed and continue to infringe at least claim 1 of the '322 Patent by including an image sensor module in the Accused Products, including the Amcrest 4MP USB Webcam (AWC496). *See* Ex. 1 (cross-sectional image of the Amcrest 4MP USB Webcam image sensor). The image sensor module structure in the Accused Products comprises a substrate having an upper surface, and a lower surface on which second electrodes are formed. *See* Exs. 1, 2 (cross-sectional images of the Amcrest 4MP USB Webcam image sensor). The image sensor module structure in the Accused Products further comprises a frame layer arranged on the upper surface of the substrate, a cavity formed between the frame layer and substrate, and a plurality of first electrodes are formed on the frame layer. *See* Ex. 3 (image of the Amcrest 4MP USB Webcam image sensor with the internal

components exposed). The image sensor module structure in the Accused Products further comprises a photosensitive chip mounted on the upper surface of the substrate and located within the cavity, and electrically connected to the first electrodes of the frame layer. *See* Exs. 2, 3 (cross-sectional image of the Amcrest 4MP USB Webcam image sensor and image of the Amcrest 4MP USB Webcam image sensor with the internal components exposed). The image sensor module structure in the Accused Products further comprises a lens holder having an upper end face, a lower end face, and an opening penetrating through the lens holder from the upper end face to the lower end face, the upper end of the opening formed with an internal thread and the lower end of the opening formed with a breach, so that the internal diameter of the upper end of the opening is smaller than the lower end of the opening, the lens holder adhered on the upper surface of the substrate by glue, wherein, the frame layer is located within the breach of the lens holder. *See* Exs. 1-3 (cross-sectional images of the Amcrest 4MP USB Webcam image sensor and image of the Amcrest 4MP USB Webcam image sensor with the internal components exposed). The image sensor module structure in the Accused Products further comprises a lens barrel having an upper end face, a lower end face, and an external thread screwed to the internal thread of the lens holder. *See* Ex. 1 (cross-sectional image of the Amcrest 4MP USB Webcam image sensor).

31. On information and belief, Defendants have induced infringement of the '322 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, their partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated image sensor technology, specifications, instructions, manuals, advertisements,



marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

32. On information and belief, Defendants have committed the foregoing infringing activities without a license.

**COUNT III: INFRINGEMENT OF THE '602 PATENT**

33. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

34. On information and belief, Defendants have infringed the '602 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products and all other products with substantially similar imaging sensors.

35. For example, on information and belief, Defendants have infringed and continue to infringe at least claim 1 of the '602 Patent by including an image sensor structure with an integrated lens module in the Accused Products including the Dahua 4MP IR 3.6mm ePoE Mini Bullet Network Camera (N44CB33). *See* Ex. 4 (cross-sectional image of the Dahua 4MP IR 3.6mm ePoE Mini Bullet Network Camera image sensor). The image sensor structure in the Accused Products comprises a chip having a plurality of light-sensing elements arranged on a light sensing area of a first surface of the chip, a plurality of first conducting pads arranged around the light-sensing area and electrically connected to the light-sensing elements, and at least one conducting channel passing through the chip and electrically connected to the first conducting pads at one end as well as extending along with a second surface of the chip. *See* Exs. 5-7 (image of the Dahua 4MP IR 3.6mm ePoE Mini Bullet Network Camera image sensor with the internal components exposed and cross-sectional images of the Dahua 4MP IR 3.6mm ePoE Mini Bullet Network Camera). The image sensor structure in the Accused Products comprises a lens module comprising a holder having a through hole and a contact surface on a

bottom of the holder, wherein the contact surface is combined with the first surface, and at least one lens completely embedded inside the through hole and integrated with the holder. *See* Exs. 4, 7 (cross-sectional images of the Dahua 4MP IR 3.6mm ePoE Mini Bullet Network Camera image sensor).

36. On information and belief, Defendants have induced infringement of the '602 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, their partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated image sensor technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

37. On information and belief, Defendants have committed the foregoing infringing activities without a license.

#### **COUNT IV: INFRINGEMENT OF THE '481 PATENT**

38. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

39. On information and belief, Defendants have infringed the '481 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, selling in the United States, or importing into the United States the Accused Products and all other products with substantially similar imaging sensors.

40. For example, on information and belief, Defendants have infringed and continue to infringe at least claim 1 of the '481 Patent by including a substrate structure for an image sensor package in the Accused Products including the Dahua 2MP WiFi Video Doorbell (DHI-DB11). *See* Ex. 8 (cross-sectional image of the Dahua 2MP WiFi Video Doorbell image sensor). The

substrate structure in the Accused Products comprises a bottom base having an upper surface formed with a plurality of first electrodes, and a lower surface formed with a plurality of second electrodes, wherein an insulation layer is coated between first electrodes and in direct surface contact with the upper surface of the bottom base. *See* Exs. 9, 10 (image of the Dahua 2MP WiFi Video Doorbell image sensor with the internal components exposed and cross-sectional image of the Dahua 2MP WiFi Video Doorbell image sensor). The substrate structure in the Accused Products comprises a frame layer arranged on and in direct surface contact with the first electrodes and the insulation layer to form a cavity together with the bottom base, wherein the insulation layer is interposed between the bottom base and the frame layer. *See* Exs. 9, 10 (image of the Dahua 2MP WiFi Video Doorbell image sensor with the internal components exposed and cross-sectional image of the Dahua 2MP WiFi Video Doorbell image sensor).

41. On information and belief, Defendants have induced infringement of the '481 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, their partners, resellers, distributors, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products by, among other things, providing the accused products and incorporated image sensor technology, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products.

42. On information and belief, Defendants have committed the foregoing infringing activities without a license.

**PRAYER FOR RELIEF**

WHEREFORE, KTI prays for judgment in its favor against Defendants for the following relief:

- A. Entry of judgment in favor of KTI against Defendants on all counts;
- B. Entry of judgment that Defendants have infringed the Patent-in-Suit;
- C. An order permanently enjoining Defendants from infringing the Patent-in-Suit;
- D. Award of compensatory damages adequate to compensate KTI for Defendants' infringement of the Patents-in-Suit, in no event less than a reasonable royalty as provided by 35 U.S.C. § 284;
- E. KTI's costs;
- F. Pre-judgment and post-judgment interest on KTI's award; and
- G. All such other and further relief as the Court deems just or equitable.

**DEMAND FOR JURY TRIAL**

Pursuant to Rule 38 of the Fed. R. Civ. P., Plaintiff KTI hereby demands trial by jury in this action of all claims so triable.

Dated: October 6, 2022

/s/ Brandon G. Moore

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